

**DEVELOPING A RECRUIT ACADEMY IN A COMBINATION  
FIRE DEPARTMENT**

**STRATEGIC MANAGEMENT OF CHANGE**

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An applied research project submitted to the National Fire Academy  
as part of the Executive Fire Officer Program

October 1997

## ABSTRACT

Training volunteer members in a combination department is generally a repetitious task. Once our yearly training cycle has ended, it needs to be repeated in order to train members who were put on during the year. It takes at least a year of semimonthly drills before a new member has enough training to be allowed to perform the tasks required on the fireground.

The purpose of this research is to determine how a recruit training academy can be designed which will be cost effective, taking into consideration time demands already placed on members, while providing Colby Fire Department (CFD) with firefighters who are well trained in a shorter period of time. Historical and action research methods were used to answer the following questions.

1. What topics should a CFD recruit training academy cover?
2. What would be the expected costs associated with setting up and conducting house recruit training program?
3. How will anticipated costs affect the Colby Fire Department budget?
4. What options for training schedules would be suitable for CFD and its members?

Procedures included a literature review, group discussions with CFD officers to review and select training guidelines, and analysis of costs and how they would impact the budget.

Results of this research were utilized to develop a set of performance requirements which will be presented in a 40-hour recruit academy format. Payroll cost for recruits and instructors is the primary expense associated with this program. Using instructional materials and facilities currently available to CFD would make the cost for these items minimal. Providing a

flexible schedule of evening and Saturday classes will reduce the impact of training on the volunteer's personal time.

It was recommended to institute this program with a slight increase in the budget. A method for evaluation also needs to be provided.

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## **INTRODUCTION**

### **Problem Statement**

The Colby Fire Department (CFD) recognizes that the quality of firefighter training will, in large amount, determine the proficiency of its firefighters at a fire scene. As a small rural combination department, CFD depends on volunteer members to handle a majority of our calls. When a new volunteer member is gained it often takes a year or more before that member has attended enough semimonthly fire drills to be competent enough to perform routine fire suppression tasks at a fire scene.

### **Purpose Statement**

The purpose of this research project is to design a recruit academy that is fiscally expedient without putting excessive time demands on its members, provide a level of training that will be safe for the recruits, and furnish CFD with firefighters who are proficient in fire ground activities in a shorter amount of time. Historical and action research methods were used to answer the following questions:

1. What topics should a CFD recruit training academy cover?
2. What would be the expected costs associated with setting up and conducting an in-house recruit training program?
3. How will anticipated costs affect the Colby Fire Department budget?
4. What options for training schedules would be suitable for CFD and its members?

## **BACKGROUND AND SIGNIFICANCE**

The CFD is a combination department consisting of three career chief officers, three career firefighters, and approximately 20 volunteer firefighters. Our protection area includes the City of Colby and surrounding agricultural area of approximately 535 square miles with a population of 8600 people. Emergency services provided by the department include structural and wildland fire suppression, heavy rescue, and limited operational level hazardous materials response. The full-time staff perform daily operations of the fire department, including management, equipment maintenance, public fire education, fire safety inspections, code enforcement, and training. The volunteer force is paid per call and are called for all incidents that require an engine company.

All members are required to attend semimonthly drills which provide an average of five hours of training per month. The full-time personnel are required to attain a minimum Firefighter I and Emergency Medical Technician certification within the first year of employment and Firefighter II by the second year. All members are required to attend 50% of the drills and runs per year. Volunteer firefighters are encouraged but not required to gain a Firefighter I certification. (Firefighter I certification is not required for these members due to limitations in most volunteer firefighters' schedules). Currently, new recruits receive the majority of their training during the semimonthly drills. Most members receive additional training by attending area fire schools and seminars when these opportunities are available. Attending outside training of this type is not required for volunteer firefighters.

Training is provided by the full-time staff and is designed to satisfy standards put forth by National Fire Protection Association (NFPA) 1001, *Firefighter Professional Qualifications* (1992). Firefighters in Kansas are not required to be certified by an accredited organization. The Fire Chief (authority having jurisdiction) may determine who is qualified to perform firefighting duties. Individual firefighter training is documented by checking off performance objectives as they are completed. These performance objectives are as stated in the NFPA 1001 standard. After a firefighter completes all performance requirements, a check list is submitted to the Kansas State Fire Marshal's office and a Certificate of Recognition is issued.

A semimonthly training schedule is designed to complete the objectives set out in NFPA 1001 for Firefighter I in approximately one year. This training cycle allows for new members to be trained in the fundamentals of firefighting and gives veteran firefighters needed review on a continuing basis.

CFD is always looking for ways to improve the training received by its members, which is the basis of this research project. As an adjunct to the normal training schedule, this research will investigate additional basic fire training for new members which will reduce the time it now takes to train a recruit to be an effective and safe addition to fire suppression activities. This project is also being prepared to satisfy the applied research project requirement for the Strategic Management of Change course at the National Fire Academy. This research relates to the change management model unit of the Strategic Management of Change course by using portions of the change management model to answer research questions.

## LITERATURE REVIEW

The focus of this literature review was to gain perspective on what others have written in regard to training new members in a recruit academy. Many sources are available that discuss philosophies and theories about training. While most do not directly address the subject of a recruit academy, inferences from their writings gave insight to my research.

In determining which training topics should be covered by a recruit academy, one must consider established training requirements. The National Fire Protection Association (NFPA) 1001 Standard clearly states its opinion on what is required to be a qualified firefighter. Section 1-1 reads: “This standard identifies the performance requirements necessary to perform the duties of a fire fighter. It specifically identifies the minimum requirements for fire fighter candidates and for the two levels of performance thereafter” (1992).

In June-July 1995 issue of *Firefighter’s News*, Larry Davis wrote an article that proposed the development of different training standards for volunteer firefighters that focused on the “minimum ‘need-to-know’ and not the ‘nice-to-know’ information” (1995, p. 64).

Robinson, in his research on minimum training standards in regards to volunteer firefighters, summarized that “Although there is consensus that there should be minimum training requirements prior to active response, there is clearly no well defined curriculum or time period that can be standardized for the fire service at this juncture” (1991, p. 8).

In another article concerning volunteer training, Cottet stated, “The training we are expected to have should meet or exceed national standards, such as those of the NFPA” (1991, p. 8).



The course duration for new personnel instruction should be at least the minimum number of hours necessary to meet the performance objectives for the designated firefighter level in accordance with NFPA 1001,.....this entry training shall take place prior to serving as a probationary member of a company. NFPA 1201 (1994)

In an article written by Gene Carlson, the author indicated that training scenarios may include, “responding to the scene, interior firefighting, driving apparatus and operating pumps, preparing to be a company officer, preparing to be a chief officer” (1996, p. 12).

The International Society for Fire Service Instructors (ISFSI) asserts that initial firefighter training usually consists of basic essentials for fire department operations such as “carrying and raising ground ladders, making the hydrant, laying the hoselines, carrying hoselines over ground ladders, and the tying of knots” (1988). ISFSI also asserts that training above these basics is needed and desirable.

This Literature Review will now change topics to examine expected costs associated with setting up and conducting an in-house recruit training program. The training program *The Volunteer Firefighter: A Breed Apart*, which deals with issues concerning volunteer firefighters, discusses financial restrictions as one neglected area that is sometimes overlooked when designing training programs. These restrictions include: “Fire personnel payroll cost, contractual costs for outside training expertise, specialized training equipment, tuition, travel, and subsistence for schools and seminars” (Snook and Olsen, 1993, p. 116).

How do you squeeze all the needed training into one year and still make the budget fit the need? One way to address needed training is to prioritize the listing. Naturally, the

highest-priority training is funded, and subsequent priorities are addressed on an as-needed basis, as funding is available. (Wilson, 1994, p. 34)

In the same article Wilson goes on to state, “Defining priorities and using the most cost effective means available will allow many departments to address mandated training and also department and nice-to-have objectives” (1994, p. 34).

With regard to the scheduling of training, Alan Ziff stated in an article in *Fire Chief Magazine*, “The training must be scheduled at a time and place that are convenient to instructors and students” (1990, p. 40).

Many authors contend that the volunteer firefighters’ personal time must be taken into consideration.

The challenge for departments is to balance training programs with emergencies and other department activities so that members are not overburdened. Keep in mind that fire service activities are competing for time with firefighters’ family members, work, and leisure activities. (Marinucci, 1993, p. 10)

In a *Fire Engineering* article, Carl Welser compared standard training evaluations for career firefighters to volunteer firefighters. “The volunteer training officer who tries to apply this training to 30 work-weary volunteers in two hours on a Monday evening eventually will find the process quite daunting” (1996, p. 12).

John Norman summarized the two last quotes when he wrote, “Training a volunteer member often is more difficult than for a career department since at least part of every workweek can be set aside to train someone who is basically a ‘captive audience,’ while the volunteer’s schedule also must accommodate other influences: job, family, etc.” (1990, p. 18).

## **Summary**

The views of the authors in this literature review indicate use of training standards for designing a recruit academy. The use of NFPA 1001 as the only training standard is not universally agreed upon. Other authors suggest that a balance between fire department needs and volunteer needs must be maintained when designing volunteer firefighter training.

## **PROCEDURES**

The literature review was conducted through the Learning Resource Center at the National Fire Academy by making use of the Interlibrary Loan program. Information and articles were also used from books, periodicals, training, and budget records available from CFD. Without the literature review, important factors to consider in designing a recruit training program may have been overlooked. Although the information reviewed did not directly address the issue of setting up a recruit training program, the views of others concerning training in general were relevant to this research.

In regard to training topics, the three chief and four company officers were each given a checkoff sheet which contained the “job performance requirements” for Firefighter I which are described in the NFPA 1001, 1992 edition. Each officer was asked to review these requirements and check off the individual sections which he felt should be covered in a recruit training program. Each officer was reminded that these standards are covered in our semimonthly drills on a yearly basis. They were asked to focus on the areas that would accelerate the normal training for new recruits and provide for efficient and safe fireground

operations. After the checkoff sheets were completed, the officers discussed each item that was marked and came to agreement on which areas were to be included in the training.

In order to estimate the cost for this project and how it would affect CFD's budget, the amount of classroom and fireground training time had to be determined. After reviewing training requirements to be covered, an approximate figure for training hours was derived. This figure was used to determine approximate salaries for the participants.

Salaries for instructors and compensation for recruits during training will be the highest cost associated with recruit training. Recruits will be paid the current federal minimum wage. As full time firefighters, instructors will be paid their normal salary. Since CFD will be using current equipment and facilities, the costs for these items will be minuscule and have no measurable impact on the fire department budget. Training materials for the recruit training will be the same as those used in our current training program, therefore no cost will be incurred for their use.

To determine the estimated number of new recruits per year, personnel records were examined for the past 19 years and the number of new recruits for each year was averaged. The average figure was considerably less than the number of new members gained in 1997, when more new members were added than in any previous year. Thus, estimates for salary costs per year will be low when compared to a year with a high number of new members.

Procedures for determining scheduling options for training consisted of group discussions with CFD officers. Schedules used in past training have been found to accommodate CFD and its members. General guidelines were suggested to the training officer to assist him in scheduling recruit training.

## **Limitations**

This project is focused on the planning stage of establishing a recruit academy. A program of this type must be tailored to fit the department. When using group process to analyze data there is usually more than one right answer. This researcher anticipates changes to this program once it has been put into effect.

Additional responsibilities of the training officer include working vacation and relief shifts. Since shifts and weekends fall at random times in the pay period, it is difficult to determine the officer's rate of pay for recruit training. Hours may be paid as either regular time or overtime, depending on hours previously worked by the officer during each particular pay period. His pay will likely be a combination of both regular and overtime rates. To be safe and not underfund the budget, training hours were figured at the higher overtime pay rate. Therefore, the budget line item amount may be higher than would actually be necessary.

### **Definitions**

**Combination Department:** A fire department that has full-time and volunteer firefighters as part of its work force.

**Fireground:** A term to describe the location in which firefighting activities take place. This includes actual fire scenes and locations where firefighter training takes place.

**Line item:** A term used to describe a specific spending category in a budget.

**Recruit:** A new member of a fire department. For the purpose of this research this usually identifies a volunteer firefighter.

**Recruit Academy:** A term is used to identify a series of training classes that are designed to teach new firefighters the basic skills and knowledge which are required to operate as a firefighter in a fire department.

**Relief Shift:** In a 19-day, 144-hour pay cycle, a firefighter is given a shift off for every 19 shifts that he works. This is called a relief shift. It is done to comply with federal labor regulations and avoid paying overtime.

**Trainers:** People who have the responsibility of teaching firefighters the skills and knowledge which are necessary to become a firefighter.

## **RESULTS**

### **Research Question 1. (see appendix)**

#### **1. What topics should a CFD recruit training academy cover?**

After reviewing the NFPA Firefighter I performance requirements, officers discussed and selected performance requirements to be included in the recruit training. A copy of the revised job performance requirements can be found in the appendix .

**Research Question 2.****2. What would be the expected costs associated with setting up and conducting an in-house recruit training program?**

Payroll for recruits and instructors will be the only tangible cost associated with conducting a recruit academy. Volunteer firefighters are paid the minimum hourly wage, which is currently \$5.15. After reviewing the training requirements to be covered, the officers felt that training could be completed in a maximum time of 40 hours. This figure taken times the hourly pay rate showed a per student cost of \$206.00.

The 19-year average for new recruits per year was 2.68. This number multiplied by the student salaries indicates the average cost per year for recruit training pay (see table 1). This figure proved to be inadequate when compared to the year 1997 which has had seven new recruits to date. The total recruit salaries for 1997 at this time would be \$1442.00.

Because the training officer is a full-time firefighter, labor costs will be higher. It is likely that these hours will have to be paid as overtime. Current hourly overtime rate for the training officer is \$17.75. Multiplying this hourly rate by the 40-hour training time equals \$710.00. Since the instructor salary is static, the cost per student will vary according to the number of students.

**Table 1. Average and Estimated Highest Costs.**

	Average # of recruits, 2.68	7 recruits for 1997
Total student salaries	\$552.08	\$1442.00
Total instructor salary	\$710.00	\$710.00
Total with instructor salary	\$1262.08	\$2152.00
Cost per student	\$470.92	\$307.43

Note. estimated per student salary \$206.00.

### **Research Question 3.**

#### **3. How will anticipated costs affect the Colby Fire Department budget?**

Table 2 shows the current 1997 CFD line items for full-time salaries, overtime, volunteer pay, and the total department budget. These numbers indicate that overtime and volunteer pay are expected to use all the funds in these line items. The line items for full-time salaries and the total department budget indicate that there will be funds left at the end of the fiscal year.

**Table 2. Expenditure Detail**

	Budgeted Expenditures 1997	Est. Actual Expenditures 1997	Difference
Full Time Salaries	\$157,712.00	\$156,201.00	+\$1511.00
Overtime	\$9,000.00	\$9,000.00	0
Volunteer Pay	\$12,000.00	\$12,000.00	0



Total Fire Department Budget	\$218,012.00	\$215,451.00	+\$2561.00
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Note. For brevity complete budget is not shown, only specific line items and final total.

In Table 3 the **highest** estimated costs for the recruit academy are included in the estimated actual expenditures. When the budgeted expenditures are compared to the revised estimated actual expenditures, overtime and volunteer pay exceed their budgeted amounts. Full-time salaries are not affected because the instructor's salary was figured as overtime and included in the overtime line item. Total department expenses are not over budget. The cost of this program is .98% of the total CFD budget.

**Table 3. Expenditure Detail With Estimated Costs for Recruit Training**

	Budgeted Expenditures 1997	Est. Actual Expenditures 1997	Difference
Full Time Salaries	\$157,712.00	\$156,201.00	+\$1511.00
Overtime	\$9,000.00	\$9,710.00*	-\$710.00
Volunteer Pay	\$12,000.00	\$13442.00*	-\$1442.00
Total Fire Department Budget	\$218,012.00	\$217,603.00*	+\$409.00

Note. For brevity, complete budget is not shown, only specific line items and final total.

\* includes estimated payroll costs for recruit academy.

#### **Research Question 4.**

#### **4. What options for training schedules would be suitable for CFD and it's members?**

During the discussions with the officers, it was determined that two scheduling options have been used in the past which worked well for CFD and its members. Recruits could

complete training in a total of 40 class hours, which may be held on Saturdays only or as a combination of both evening and Saturday classes. It was decided that the training officer should discuss these options with the recruits and come up with a satisfactory schedule.

Reading assignments and appropriate homework should be used to facilitate the training process. The homework assignments will not be included in the 40-hour training time.

In regard to scheduling, it was necessary to determine how often the recruit academy should be conducted. Since the CFD continually recruits new members throughout the year, it was decided that the recruit academy should be held for no fewer than three persons.

## **DISCUSSION**

Although minimum training standards for volunteer firefighters was not a question asked in this research, this subject provided useful insights in the study of topics to include in the recruit academy.

The literature review suggests that there are many opposing views concerning what training standards should be used when training volunteer firefighters. The establishment of minimum training standards for volunteer firefighters was not a point of contention among the various authors. The controversy lies in what the minimum standards for volunteer firefighters should be. This point can be reinforced by this research which led to the decision of the CFD to use only portions of the NFPA 1001 requirements in our final draft of the recruit academy training guidelines.

It can be concluded that some requirements of NFPA 1001 are unnecessary for the training of recruits in the Colby Fire Department. However one should not surmise that this conclusion states this is all the training volunteer firefighters need.

This program is intended to be used in CFD as a starting point for continued firefighter training. The decision to use portions of the NFPA 1001 standard as a guideline for recruit training was based on the fact that CFD currently uses the entire Firefighter I section in our standard semimonthly training. This will allow the department to expand and refresh the recruit training already in place, by enabling CFD to use less training time for review and more time to provide advanced training.

The literature review identifies payroll costs, outside training costs, equipment, and tuition as financial restrictions to consider when designing a training program. By utilizing training materials, instructors, equipment, and facilities currently available within CFD, the cost of training is primarily limited to instructor and recruit salaries.

The financial impact of this program on the budget appears to be small, less than 1%. The results indicate that if this program is implemented this year it may cause costs to exceed individual line items, but it would not exceed the overall budget. It is possible that recruit training could be completed in less than 40 hours. This would reduce the total salaries for participants. The wages for the training officer were also figured at the higher overtime rate. In actuality, the salary would most likely be a combination of straight and overtime pay, which would reduce the amount in this line item.

Most people who wish to contribute their talents to CFD realize they must also invest the necessary time to the organization. CFD would be negligent if it didn't provide the adequate

training required in order for its volunteers to perform their duties satisfactorily. With this in mind, it would benefit the organization to consider scheduling training when the members are most available. This idea also reflects the viewpoints of the authors in the literature review.

Training options vary among fire departments depending on specific cultural, social, and environmental factors. For CFD, the best source of information on schedule alternatives came from our past experience in scheduling training. We have found that using a combination of evening and Saturday class periods and letting the students and instructor decide on what evenings and Saturdays would work best for the class has given us the best results. It works well for the students, instructors, and fire department. Allowing input from participants may also provide ideas for other alternatives in scheduling of training.

After recruits complete training, the knowledge base will be more evenly balanced among the fire department. This will require less time to be spent covering the basics, thereby allowing for increased training in topics that are less familiar to members. Drills will also become more interesting. It is logical to assume that improving the initial training of recruits will also have a positive effect on firefighter safety.

## **RECOMMENDATIONS**

The purpose of this study was to provide information that could be used in designing a training program for recruits. The findings of this research support the feasibility of conducting a recruit academy.

It is recommended that CFD initiate a recruit training program. Implementation of this program will produce a better trained firefighter in a shorter amount of time. The results of this

study have shown that by using the modified performance requirements, time required for training will be reduced and costs will be lower.

Implementation should begin with selection of instructional materials. A course syllabus should then be designed to provide an outline for students and instructors. A method for evaluation of the course should also be provided to ensure the program is meeting expectations.

An anticipated long-term benefit of the recruit academy will be the improvement of semimonthly departmental training. To maximize the effect of a recruit academy, the current semimonthly drills should be modified to take advantage of the training time gained from not having to teach new firefighters the basics. Having a higher level of basic knowledge in the ranks will allow for more advanced instruction. Instituting improvements and additions in semimonthly drills will increase the knowledge and skill levels of all department personnel.

A slight increase in the annual budget is recommended. This increase should be based on the highest estimated costs found in this study. After the recruit academy has completed a budget cycle, a more definitive assessment of the financial impact can be made.

Developing a recruit training program in a combination fire department requires input from all members. CFD is fortunate to have a good relationship and sense of teamwork between full-time and volunteer members. Without cooperation from all members, research such as this would be very difficult to conduct.

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## **APPENDIX**

## PERFORMANCE REQUIREMENTS FOR CFD RECRUITS

These Performance Requirements were selected from the NFPA 1001 Fire Fighter Professional Qualifications for Fire Fighter, Firefighter I level. These standards are to be used as guide-lines for the Colby Fire Department Recruit Training Program.

### 3.3 Safety.

3-3.2 Describe the elements of a personnel accountability system and demonstrate the application of the system at a incident.

3-3.3 Identify dangerous building conditions created by fire.

3-3.4 Demonstrate techniques for when trapped or disoriented in a fire situation or in a hostile environment.

3-3.6 Describe safety procedures when using fire service lighting equipment, given the following:

- (a) Power supply (portable or mounted)
- (b) Lights
- (c) Cords
- (d) Connectors
- (e) Ground-fault interrupter (GFI)

3-3.9 Shut off the utility services to a building.

### 3-4 Fire Alarm And Communication.

3-4.5 Define and demonstrate prescribed fire department radio procedures, including:

- (a) Routine traffic
- (b) Emergency traffic
- (c) Emergency evacuation signals

### 3-5 Fire Behavior.

3-5.1 Define fire.

3-5.2 Define the triangle and tetrahedron.

3-5.3 Recognize the following conditions and explain their associated hazards and appropriate actions:

- (a) Incipient fire
- (b) Roll over
- (c) Hot smoldering fire
- (d) Flash over
- (e) Steady state burning

(f) Backdraft

3-5.4 Identify three products of combustion commonly found in structural fires that create a life hazard.

3-5.6 Define the three physical stages of matter in which fuels are commonly found.

3-5.7 Define the relationship of the concentration of oxygen to combustibility and life safety.

3-5.8 Describe the process of thermal layering that occurs in structural fires and how to avoid disturbing the normal layering of heat.

### 3-7 Personal Protective Equipment.

3-7.1 Identify the function of the following articles of protective equipment:

- (a) Helmet (with eye shields)
- (b) Hood
- (c) Boots
- (d) Gloves
- (e) Protective coat
- (f) Protective trousers
- (g) Self-contained breathing apparatus (SCBA)
- (h) Personal alert safety system (PASS)
- (i) Eye protection

3-7.3 Demonstrate the donning and doffing of the protective equipment specified in 3-7.1

3-7.4 Identify the hazardous environments requiring the use of respiratory protection.

3-7.5 Identify the physical requirements of an SCBA.

3-7.6 Describe the uses and limitations of SCBA.

3-7.7 Identify each component and safety feature of the SCBA.

3-7.8 Describe the function of each component of the SCBA.

3-7.9 Demonstrate donning and doffing the SCBA while wearing protective clothing.

3-7.10 Demonstrate that the SCBA is in a safe condition for immediate use.

3-7.11 Demonstrate the use of SCBA in conditions of obscured visibility.

3-7.12 Demonstrate the use of SCBA in conditions of restricted passage.

3-7.13 Demonstrate the following emergency procedures to be used in the event of SCBA failure:

- (a) use of the emergency by-pass or purge valve
- (b) conservation of air
- (c) Breathing from the breathing tube or regulator in the event of a face piece failure

3-7.14 Demonstrate techniques for maximizing the air capacity of an SCBA under work conditions.

3-7.15 Demonstrate replacement of an expended cylinder on a SCBA assembly with a full cylinder.

3-7.16 Demonstrate and document routine maintenance for SCBA, including inspecting, cleaning, sanitizing, and cylinder recharging.

3-7.17 Demonstrate rescue procedures for the following, without compromising the rescuer's respiratory protection:

- (a) A fire fighter with functioning respiratory protection
- (b) A fire fighter without functioning respiratory protection
- (c) A civilian without respiratory protection

### **3-9 Ventilation.**

3-9.1 Define the principles of ventilation, and identify the advantages and effects of proper ventilation.

3-9.2 Identify the safety consideration and precautions to be taken while ventilating a structure.

3-9.3 Describe the advantage and disadvantages of the following types of ventilation:

- (a) Vertical
- (b) Horizontal
- (c) Trench/strip
- (d) Mechanical
- (e) Mechanical pressurization
- (f) Hydraulic

3-9.4 Identify the signs, causes, and effects of backdraft explosions.

3-9.5 Identify methods of preventing a backdraft explosion.

3-9.6 Identify the types of tools used during ventilation.

3-9.7 Recognize the characteristics of and list necessary precautions when ventilating at least the following roof types:

- (a) Flat
- (b) Shed
- (c) Pitched
- (d) Arched

3-9.8 Demonstrate determining the integrity of a roof system by sounding.

3-9.9 Describe how the following factors are used to determine the integrity of a roof system:

- (a) Construction
- (b) Visual observation
- (c) Elapsed time of fire

3-9.10 Define procedures for the types of ventilation referred to in 3-9.3.

3-9.11 Demonstrate opening various types of windows from inside and outside, with and without the use of tools.

3-9.12 Demonstrate breaking window or door glass and removing obstructions.

3-9.13 Using both hand and power tools, demonstrate the ventilation of both pitched and flat roofs.

### **3-10 Ropes.**

3-10.2 Tie an approved knot and hoist any selected forcible entry tool, pike pole/hook, ground ladder, hose line, extinguisher, or appliance to a height of at least 12 feet (3.7m), given the proper rope.

3-10.4 Use a rope to tie ladders, hose and other objects to secure them.

### **3-11 Ladders.**

3-11.1 Identify and describe the use of the following types of ladders.

- (a) Folding attic
- (b) Roof
- (c) Extension
- (d) Straight wall
- (e) Aerial devices

3-11.2 Carry, position, raise, and lower the following ground ladders:

- (a) 14-ft single or wall ladder
- (b) 24-ft extension ladder
- (c) 35-ft extension ladder
- (d) Folding/attic ladder

3-11.3 Demonstrate the procedures of working from ground or aerial ladders with tools and appliances, with and without a safety harness.

3-11.4 Climb the full length of each type of ground ladder and aerial ladder available to the authority having jurisdiction and demonstrate:

- (a) Carrying fire fighting tools/equipment while ascending and descending.
- (b) Bringing an injured person down ladders.

3-11.5 Demonstrate the deployment of a roof ladder on a pitched roof.

### **3-12 Fire Hose, Appliances, And Streams.**

3-12.2 Demonstrate the use of nozzles, adapters, and hose appliances and tools on a pumper as required to be carried.

3-12.3 Advance uncharged and charged attack lines of two different sizes: 1 1/2 inch or larger, from a pumper, given the necessary equipment and operating as a member of a team for the following evolutions:

- (a) Into a structure.
- (b) Up a ladder to a second floor landing
- (c) Up an inside stairway to an upper floor
- (d) Up an outside stairway to an upper floor
- (e) Down an inside stairway to a lower floor
- (f) Down an outside stairway to a lower floor
- (g) to an upper floor by hoisting

3-12.4 Demonstrate the following, given fire hose used for fire attack [minimum of 1 1/2 inch] and water supply [minimum 2 1/2 inch]:

- (a) Three types of hose loads and finishes
- (b) three types of hose rolls
- (c) Coupling and uncoupling two lengths
- (d) Two hose carries
- (e) Extending hose lines
- (f) Replacing burst sections of hose

3-12.7 Demonstrate a hand lay of 300 ft. of supply line 2 1/2 in. of larger from a pumper to a water stream.

3-12.10 Demonstrate how to open and close a nozzle and how to adjust its stream pattern and flow setting, when applicable.

3-10.12 Define the following methods of water application:

- (a) Direct

- (b) Indirect
- (c) Combination

3-12.13 Identify precautions to be followed while advancing hose lines to a fire.

3-12.14 Identify 3 observable results that are obtained when the proper application of a fire stream is accomplished.

### **3-14 Fire Control.**

3-14.2 Explain the procedures for extinguishing ground cover fires.

### **3-16 Overhaul.**

3-16.1 Identify the purpose of overhaul.

3-16.2 Recognize at least 4 indicators of hidden fires.

3-16.3 Expose hidden fires by opening ceilings, walls, and floors and by pulling apart burned materials.

### **3-19 Water Supplies.**

3-19.1 Connect a supply hose to a hydrant and fully open and close the hydrant.

3-19.2 Demonstrate hydrant-to-pumper hose connections for forward and reverse hose lays.

3-19.3 Assemble and connect the equipment necessary for drafting from a static water supply source.

3-19.4 Describe the deployment of a portable water tank.

3-19.6 Describe loading and off loading of tanks on mobile water supply apparatus.